Kerry Leigh McGowan

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EDUCATION

Washington State University — Pullman, WA
Ph.D. Candidate, Biology — 2017-present
- Graduate Certificate in Bioinformatics, expected spring 2021

Muhlenberg College — Allentown, PA
B.S., *summa cum laude*, Biology — 2011-2015

PUBLICATIONS

Kelley JL, Desvignes T, **McGowan KL**, Perez M, Rodriguez LA, Brown AP, Culumber Z, Tobler M. 2020. microRNA expression variation as a potential molecular mechanism contributing to adaptation to hydrogen sulphide. Special issue, *J Evol Biol*. DOI: 10.1111/jeb.13727

Hotaling S*, Shah AA*, **McGowan KL**, Tronstad LM, Giersch JJ, Finn DS, Woods A, Dillon ME[a], Kelley JL[a]. 2020. Mountain stoneflies may tolerate warming streams: evidence from organismal physiology and gene expression. *Glob Change Biol.* 26(10). DOI: 10.1111/gcb.15294 **Contributed equally* [a]*Co-supervised research*

McGowan KL, Passow CN, Arias-Rodriguez L, Tobler M, Kelley, JL. 2019. Expression analyses of cave mollies (*Poecilia mexicana*) reveal key genes involved in early-stage eye regression. *Biol Lett*. 15(10). DOI: 10.1098/rsbl.2019.0554

Brown AP, **McGowan KL**, Schwarzkopf EJ, Greenway RS, Rodriquez LA, Tobler M, Kelley JL. 2019. Local ancestry analysis reveals genomic convergence in extremophile fishes. *Philos T Roy Soc B*. 374(1777). DOI: 10.1098/rstb.2018.0240

McGowan KL, Iyengar EV. 2017. The difference between a rock and a biological hard place: epibionts in the rocky intertidal. *Mar Biol.* 164(109). DOI: 10.1007/s00227-017-3131-z

FUNDING, Total to date: $14,600

Richard R. and Constance M. Albrecht Scholarship, Washington State University Graduate School ($1,500) — 2021

Vern Parish Fund, American Livebearer Association ($2,000) — 2020

Carl H. Elling Award, Washington State University ($2,600) — 2018-2020

Washington NASA Space Grant Fellowship in Science and Engineering ($2,500) — 2019

Abelson Fellowship, School of Biological Sciences, Washington State University ($6,000) — 2017-2019

HONORS AND AWARDS

Exceptional Research Award, The Graduate Program Committee, School of Biological Sciences, Washington State University — 2020

Phi Beta Kappa Society, Pi Chapter — 2014-present

Muhlenberg College Dana Honors Scholar — 2011-2015

Dean's List, Muhlenberg College (every semester) — 2011-2015

Presidential Merit Scholarship — 2011-2015

Awarded Dean's Grant (Independent Research Stipend), Muhlenberg College — 2014

Crist Fellowship (Independent Research Stipend), Muhlenberg College — 2014

RESEARCH EXPERIENCE

Ph.D. Candidate, School of Biological Sciences, Washington State University, Mentor Dr. Joanna Kelley — Pullman, WA 2017-present
- Examining hydrogen sulfide detoxification and regressive evolution in extremophile fish.

Intern, Departments of Entomology and Invertebrate Zoology, Smithsonian National Museum of Natural History, Mentors Dr. Stuart McKamey and Tim Coffer — Washington, D.C. 2016
- Examined specimens of treehopper insects using several morphological characteristics to redefine our taxonomic knowledge of the tribe Darnini.
- Catalogued specimens of freshwater bivalves.

NSF Research Experience for Undergraduates Participant, Integrative Biology and Ecology of Marine Organisms, Friday Harbor Laboratories, University of Washington, Mentor Dr. Erika Iyengar — Friday Harbor, WA 2014
- Conducted a self-designed transect study examining epibiotic communities on molluscs in the rocky intertidal of the Pacific Northwest.

Research Assistant, Friday Harbor Laboratories, University of Washington, Mentor Dr. Erika Iyengar — Friday Harbor, WA 2014
- Collected transect data on the distribution of terrestrial slugs (European black slug, *Arion ater*; banana slug, *Ariolimax columbianus*).

Student Independent Researcher, Muhlenberg College, Biology Department, Mentor Dr. Erika Iyengar — Allentown, PA 2013-2015
- Conducted a self-designed research project investigating behavioral inducible defenses of a freshwater isopod (*Lirceus* sp.) in response to fish predation.

TEACHING EXPERIENCE

Teaching Assistant, Washington State University — Pullman, WA
Introductory Biology, Introduction to Nutrition, Biology of Humans — Fall 2017-Fall 2020

Guest Lecturer, Washington State University — Pullman, WA
Contemporary Genetics, Biology of Fishes — Spring 2020

Level 1 Certified (CRLA) Tutor, Muhlenberg College — Allentown, PA
General Chemistry, Organic Chemistry, Principles Biology, Elementary/Intermediate Spanish — 2012-2015

ORAL PRESENTATIONS

McGowan KL, Landers J*, Patel C*, Duttke S, Greenway R, Passow CN, Arias-Rodriguez L, Tobler M, Kelley JL. Identifying regulatory mechanisms affected by hydrogen sulfide in an extremophile fish, Poeciliid Fishes Virtual Forum, February 2021 **Contributed equally* — Virtual (COVID-19) 2021

McGowan KL, Duttke S**,** Landers J*, Patel C*, Tobler M, Kelley JL. Identifying regulatory mechanisms affected by hydrogen sulfide in an extremophile fish, Genome Informatics, Virtual Conference **Contributed equally* — Virtual (COVID-19) 2020

McGowan KL. Evolutionary education in the inland northwest, SciComm Conference, Kansas State University — Manhattan, KS 2019

McGowan KL. Hydrogen sulfide and caves: how habitats affect fish, Palouse-Clearwater Environmental Institute Science After Hours, Washington State University — Pullman, WA 2017

McGowan KL. Community science and coho salmon: investigating pre-spawn mortality in an urban creek in Seattle, Salmon Recovery Conference — Wenatchee, WA 2017

McGowan KL, Iyengar EV. Epibiosis on intertidal molluscan shells in the Pacific Northwest**,** Lehigh Valley Ecology & Evolution Symposium (LVEES), Muhlenberg College — Allentown, PA 2015
- Awarded runner-up, Best Undergraduate Talk.

POSTER PRESENTATIONS

McGowan KL, Duttke S, Landers J*, Patel C*, Greenway R, Passow CN, Arias-Rodriguez L, Tobler M, Kelley JL. Identifying regulatory mechanisms affected by hydrogen sulfide in an extremophile fish. Graduate Research Symposium, School of Biological Sciences, Washington State University **Contributed equally* — Virtual (COVID-19) 2021
- Awarded Best Student Poster

McGowan KL, Tobler M, Arias-Rodriguez L, Kelley JL. Genomic variation and signatures of selection in poeciliid fish in response to an extreme environment. — Port Townsend, WA 2020

Evolutionary Biology in the Pacific Northwest (EVO-WIBO) **Cancelled due to COVID-19*

McGowan KL, Tobler M, Arias-Rodriguez L, Kelley JL. Genomic variation and signatures of selection in poeciliid fish in response to an extreme environment. Graduate and Professional Student Association Academic Showcase, Washington State University **Cancelled due to COVID-19* — Pullman, WA 2020

McGowan KL, Tobler M, Arias-Rodriguez L, Kelley JL. Genomic variation and signatures of selection in poeciliid fish in response to an extreme environment. Graduate and Professional Student Association Academic Showcase, Washington State University — Pullman, WA 2019

McGowan KL, Passow CN, Tobler M, Kelley JL. Genomic variation and signatures of selection in poeciliid fish in response to an extreme environment. Graduate Research Symposium, School of Biological Sciences, Washington State University — Pullman, WA 2019

McGowan KL, Passow CN, Tobler M, Kelley JL. Differential gene expression in eye transcriptomes of cave and surface populations of the Atlantic molly, *Poecilia mexicana*. Center for Institutional Research Computing Open House and Research Computing Symposium, Washington State University — Pullman, WA 2018

McGowan KL, Passow CN, Tobler M, Kelley JL. Differential gene expression in eye transcriptomes of cave and surface populations of the Atlantic molly, *Poecilia mexicana*. Evolutionary Biology in the Pacific Northwest (EVO-WIBO) — Port Townsend, WA 2018

McGowan KL, Passow CN, Tobler M, Kelley JL. Differential gene expression in eye transcriptomes of cave and surface populations of the Atlantic molly, *Poecilia mexicana*. Graduate and Professional Student Association Academic Showcase, Washington State University — Pullman, WA 2018

McGowan KL, Passow CN, Tobler M, Kelley JL. Differential gene expression in eye transcriptomes of cave and surface populations of the Atlantic molly, *Poecilia mexicana*. Graduate Research Symposium, School of Biological Sciences, Washington State University — Pullman, WA 2018

McGowan KL, Iyengar EV. Epibiosis on gastropod shells in the rocky intertidal: effects of zonation, shell rugosity, and migration, Society for Integrative and Comparative Biology (SICB) — West Palm Beach, FL 2015

McGowan KL. The cnidome of the Actinarian *Aiptasia pallida* (Family Aiptasiidae): a qualitative study of cnidocyst ultrastructures using SEM, Senior Capstone Presentation, Muhlenberg College — Allentown, PA 2014

McGowan KL[†], Gonsenhauser R[†], Iyengar EV. Inducible behavioral defenses of freshwater isopods in response to fish predation, Lehigh Valley Ecology & Evolution Symposium (LVEES), Lafayette College [†] Both authors contributed equally. — Easton, PA 2013

VOLUNTEER WORK

Volunteer Coordinator, AmeriCorps, Puget Soundkeeper Alliance — Seattle, WA, 2016-2017
- Recruited for, trained, and assisted volunteers on stewardship programs, including marine debris cleanups, salmon pre-spawn mortality surveys, and on-the-water pollution patrols via kayak and boat.

Corps Member, AmeriCorps, American Conservation Experience — Flagstaff, AZ, 2015
- Performed habitat restoration, invasive species removal, trail maintenance, and botanical surveys in several national parks.

OUTREACH AND MENTORING

Officer, Graduate Women's Alliance in Academia, Washington State University — Pullman, WA, 2020
- Provided a safe space for the graduate community to discuss women's issues while making a positive impact on campus.

Research Mentor to Undergraduates, Washington State University — Pullman, WA, 2019-present
- Guided three undergraduates through capped small RNA-sequencing data analysis using a high-performance computing cluster.

Co-founder, Evolutionary Education in the Inland Northwest (EvoEd-IN) — Pullman, WA, 2018-2019
- Taught evolutionary biology in rural and underserved high schools in WA.
- Traveled to classrooms to discuss graduate careers in STEM.

Volunteer, Fuel Your Future — Seattle, WA, 2017
- Provided nutritional education to elementary school youth.

ADDITIONAL SKILLS

- RNA extraction and library preparation
- Quality control using Qubit 2.0 Fluorometer and Agilent 2100 Bioanalyzer
- Analyze genomic, transcriptomic, and capped small RNA datasets using a high-performance computing cluster
- Proficient in R, Bash, and Python
- Version control with Git and GitHub